

NASA TECH BRIEF

Marshall Space Flight Center



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Teardown Analysis for Detecting Shelf-Life Degradation

A teardown analysis technique may be applied as a guideline in establishing methods of predicting the shelf life of many consumer items such as dry cells, paints, ammunition, cosmetics, drugs and fertilizers. Since the analysis technique is used on devices that are basically chemical systems, some of its principles may be used to investigate the physical and chemical properties of the constituent materials of the consumer items. The use of teardown analysis as a major verification test method departs from the traditional failure analysis investigations and is concerned with the disassembly and dissection of the component, inspection by various methods, and analytical testing.

The procedures and specifications developed for the implementation of teardown analyses are available as guidelines in examining component materials, analytically determining the physical properties and chemical compositions, and developing the control

data necessary for ascertaining the effects of environments and their influence on deterioration and degradation mechanisms.

Note:

Requests for further information may be directed to:

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No patent action is contemplated by NASA.

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